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Cystostereum sirmaurense sp. nov. from India

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Abstract—A new corticioid species, *Cystostereum sirmaurense*, is described from Himachal Pradesh, India.

Key words—*Agaricales, Agaricomycetes, Basidiomycota, Cystostereaceae,* Himalaya

Introduction

During the fungal forays conducted in August 2015 in the Nahan area of district Sirmaur, Himachal Pradesh, India, Ramandeep & Avneet collected a corticioid specimen growing in association with a living angiospermous tree in a mixed forest. Based on its macro and micromorphological details and comparison with the literature (Rattan 1977, Eriksson & Ryvarden 1975, Bernicchia & Gorjón 2010, Prasher & Ashok 2013, Dhingra & al. 2014, Sanyal 2014, Mycobank 2019) it has been placed in *Cystostereum* Pouzar (*Cystostereaceae*), close to the type species *C. murrayi* (Berk. & M.A. Curtis) Pouzar. A portion of the basidiocarp was sent for expert comment to Prof. Nils Hallenberg (University of Gothenburg, Sweden), who confirmed the findings and supported the proposal of a new species, described here as *Cystostereum sirmaurense*.

Materials & methods

The collection was sampled during a field trip conducted in the Nahan forest division of the Sirmaur district (Himachal Pradesh, India) during August 2015. Colour standards follow Kornerup & Wanscher (1978). The dried specimen was deposited at the Herbarium, Department of Botany, Punjabi University, Patiala, India (PUN).

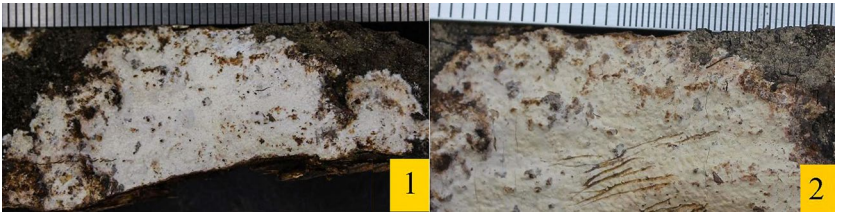

Plate 1. *Cystostereum sirmaurense* (holotype, PUN (Kaur 10097)). 1. Basidiocarp showing hymenial surface (fresh); 2. Basidiocarp showing hymenial surface (dry). Scales in mm.

Crush mounts and free hand sections were used to study the morphology of hyphae, cystidia, basidia, basidiospores, etc. in water and 3%, 5%, and 10% KOH solutions, and stained in cotton blue (1% in lactophenol), Congo red (1% in distilled water), phloxine (1% in distilled water), sulphovanillin (0.5gm vanillin + 4.0ml conc. sulphuric acid + 2.0ml distilled water), and Melzer's reagent (0.5gm iodine + 1.5gm KI + 20gm chloral hydrate + 20ml distilled water). Line diagrams of various microscopic structures were drawn using a camera lucida.

Taxonomy

Cystostereum sirmaurense R. Kaur, Avn.P. Singh & Dhingra, MB 829964 Plates 1,2

Differs from *Cystostereum murrayi* by its almost smooth hymenium with few scattered tubercles and more broadly ellipsoid basidiospores.

Type: India, Himachal Pradesh: Sirmaur, Nahan, 2 km from Ambwala towards Nahan, on a living angiospermous tree, 23 August 2015, Ramandeep Kaur & Avneet Pal Singh 10097 (, PUN).

Etymology: The epithet refers to the district where the collection was made.

Basidiocarp resupinate, effused, adnate, ≤340 µm thick in section; hymenial surface smooth but with minute scattered tubercles, white when fresh, becoming yellowish white to orange white on drying; margins thinning or indeterminate, paler concolorous. Hyphal system dimitic. Generative hyphae branched, with clamps, thin-walled, subhyaline up to 2.8 µm wide. Skeletal hyphae unbranched, aseptate, thick-walled, subhyaline up to 5.2 µm diam. Cystidia 26–44 × 7–8.5 µm, variably shaped but generally with an obtuse apex, thin- to somewhat thick-walled, with basal clamp, embedded in the hymenium and subhymenium, not staining in sulphovanillin. Basidia 15–20 × 3.8–4.7 µm, subclavate to clavate, 4-sterigmate, with basal clamps; sterigmata ≤3.3 µm long. Basidiospores 3.3–4.2 × 2.3–3.3 µm, ellipsoid to broadly ellipsoid, apiculate, thin-walled, smooth, inamyloid, acyanophilous.

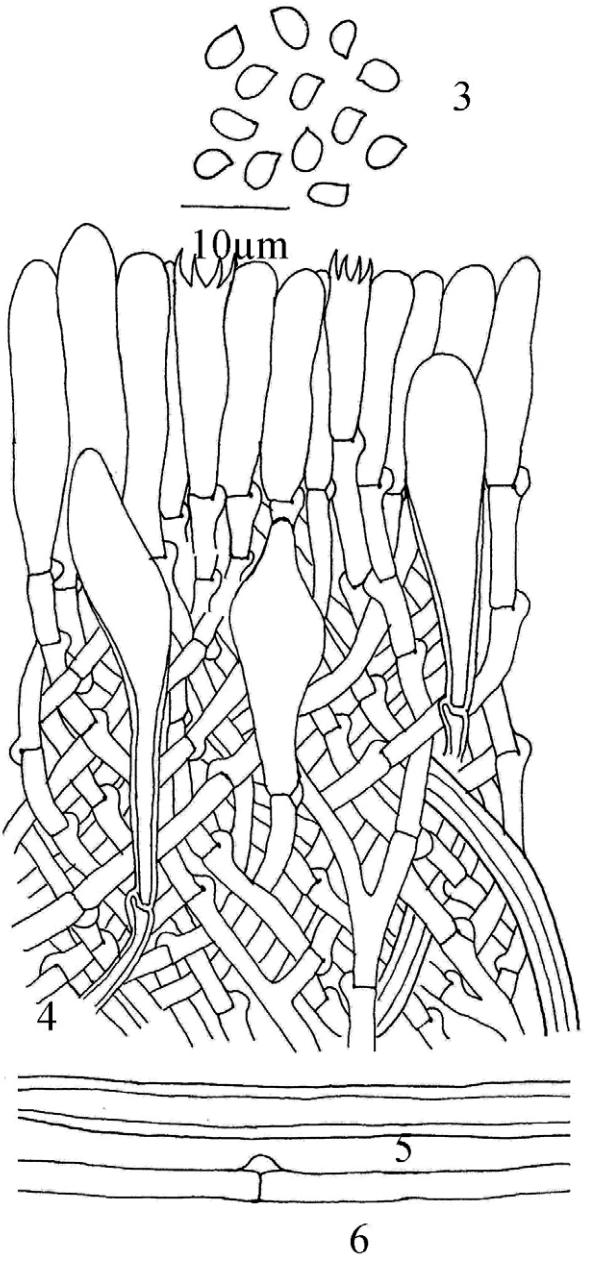

Plate 2. *Cystostereum sirmaurense* (holotype, PUN (Kaur 10097)). 3. Basidiospores; 4. Reconstruction of hymenial and subhymenial zones; 5. Skeletal hypha; 6. Generative hypha.

Discussion

Pouzar (1959) proposed *Cystostereum* on the basis of unique combination of numerous gloeocystidia, dimitic hyphal system with very scarce light-couriered skeletal hyphae, hard consistency of trama, and inamyloid basidiospores. With the addition of *C. sirmaurense*, eight species are now represented in *Cystostereum* (MycoBank 2019). From India, previously only *C. murrayi* has been described, from Himachal Pradesh (Rattan 1977; Kaur 2018) and Uttarakhand (Sanyal 2014). *Cystostereum murrayi* differs from *C. sirmaurense* in having a tuberculate hymenial surface and narrower basidiospores.

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Literature cited

Bernicchia A, Gorjón SP. 2010. *Corticiaceae* s.l. Fungi Europaei 12. Edizioni Candusso. Alassio. Italia. 1008 p.

Dhingra GS, Singh AP, Kaur J, Priyanka, Kaur H, Rani M, Sood S, Singla N, Kaur H, Jain N, Gupta S, Kaur M, Sharma J, Rajnish, Kaur G. 2014. A checklist of resupinate, non-poroid agaricomycetous fungi from Himachal Pradesh, India. Synopsis Fungorum 32: 8–37.

Eriksson J, Ryvarden L. 1975. The *Corticiaceae* of North Europe. Volume 3. *Coronicium – Hyphoderma*. Fungiflora, Oslo, Norway. pp. 287–546.

Kaur M. 2018. Systematic studies on resupinate non-poroid hymenomycetous fungi from district Shimla (H.P.) and evaluation of selected taxa for ligninolytic activity. Ph.D. Thesis. Punjabi University, Patiala. 436 p.

Kornerup A, Wanscher JH. 1978. Methuen handbook of colour, 3rd ed. Methuen and Co. Ltd. London. 252 p.

Mycobank. 2019. Fungal databases. Nomenclature and species banks. [Accessed: 02/02/2019] http://www.mycobank.org/

Pouzar Z. 1959. New genera of higher fungi III. Česká Mykologie 13(1): 10–19.

Prasher IB, Ashok D. 2013. A checklist of wood rotting fungi (non-gilled *Agaricomycotina*) from Himachal Pradesh. Journal on New Biological Reports 2(2): 71–98.

Rattan SS. 1977. The resupinate *Aphyllophorales* of the North Western Himalaya. Bibliotheca Mycologica 60. Cramer, Germany. 427 p.

Sanyal SK. 2014. Taxonomic studies on resupinate *Polyporales* of Uttarakhand. Ph.D. Thesis. Punjabi University, Patiala. 300 p.